

**BUREAU OF HIGHWAYS  
REQUEST FOR PROPOSAL  
for  
QUALIFICATIONS BASED SELECTION FOR PREQUALIFIED SERVICES**

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

For efficiency sake, we are asking that the vendor firm provide 4 paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

Mark Sweeney, P.E.  
18101 West Nine Mile Road  
Southfield, MI 48075  
sweeneym@michigan.gov

These copies must be received by **March 25, 2005 no later than 4:00 p.m.** Fax and electronic copies are not acceptable.

In addition, provide one unbound copy to:

Regular Mail:  
Secretary, Operations Contract Support  
Michigan Department of Transportation  
P.O. Box 30050  
Lansing, MI 48909

OR

Overnight Mail:  
Secretary, Operations Contract Support  
Michigan Department of Transportation  
425 W. Ottawa  
Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT website as soon as possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

Please note that the MDOT project manager will be on vacation until March 22, 2005, and that all questions received will be answered upon his return.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the firm considered most qualified to perform the engineering services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

**The maximum allowable pages for your proposal shall follow the guidelines detailed in Exhibit F of the Vendor Selection Guidelines (October 2004) for > \$500,000.**

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scope of services is attached to this solicitation.

**PROJECT LOCATION:** I-75 (Chrysler Freeway) from Gibraltar to Toledo Dix, Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township

**CONTROL SECTION, JOB NUMBER:** CS 82191 – JN 79672C, JN 79011, JN 79012, JN 79013

**DESCRIPTION OF WORK:** Freeway Reconstruction

**I Primary Prequalification Classification:**

Roadway Rehabilitation & Rural Freeways  
Short and Medium Span Bridges

**II Secondary Prequalification Classification:**

Specialty Walls and Slopes  
Municipal Utilities  
Hydraulics  
Landscape Architecture  
Right-of-Way Surveys  
Road Design Surveys  
Structure Surveys  
Photogrammetric Control Surveys  
Photogrammetry  
Asbestos Investigations  
Geotechnical Engineering Services  
Maintaining Traffic Plans & Provisions  
Pavement Marking Plans  
Permanent Freeway Traffic Signing Plans  
Permanent Non-Freeway Traffic Signing Plans  
Traffic Signal Design  
Traffic Operations Studies  
~~Traffic Signal Operations~~ (*deleted per Mark Sweeney, 3/22/05*)  
~~Utility Coordination~~ (*deleted per Mark Sweeney, 3/22/05*)

The anticipated start date of the service is July, 2005.

The anticipated completion date for the service is Dec 1, 2006.

DBE Requirement: 10%

**SCOPE OF DESIGN SERVICES**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**I. SCOPE OF VENDOR DUTIES**

Complete the design of this project including, but not limited to the following:

- A. Perform design surveys.
- B. Perform a drainage study and related design.
- C. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- D. Compute and verify all plan quantities.
- E. Prepare staging plans and special provisions for maintaining traffic during construction.
- F. Prepare pavement marking plans and special provisions.
- G. Prepare traffic signal plans and special provisions.
- H. Prepare permanent signing plans and special provisions for non-freeway sign upgrading.
- I. Prepare permanent signing plans and special provisions for freeway sign upgrading.
- J. Provide base sheets to the MDOT Electrical Unit, and incorporate their plans, special provisions and details into the project as appropriate.
- K. Provide base sheets to the MDOT MITS Center. Receive MDOT's mark-up drawings, pay items and special provisions, and prepare necessary MITS plans as appropriate. The Vendor will be responsible for all CADD and SAPW work.
- L. Prepare Right-Of-Way plans as required to locate, verify and purchase real estate and/or obtain construction access permits for this project.

- M. Perform a Crash Analysis and Safety Review for this project as well as for the included bridge projects (~~15~~ 16 structures) (*revised per Mark Sweeney, 3/22/05*). (See Attachment B)
- N. Prepare the accident analysis report for this project and for the included bridge projects (~~15~~ 16 structures) (*revised per Mark Sweeney, 3/22/05*). A separate report may be required for the roadway, for each of the structure locations, and for each of the design elements included within the design exception requests.
- O. Provide a capacity analysis, as well as user costs.
- P. As part of this project, ~~14~~ 15 bridges (*revised per Mark Sweeney, 3/22/05*) will be designed by the Vendor (See Attachment D).
- Q. As part of this project, the design of additional bridges may be added at a later date, which will be designed by the Vendor. These additional structures may be associated with different job numbers (still to be determined), but will be included within this selection. In the event that the bridges are added, the Vendor will be notified accordingly with Scopes of Work provided at that time.
- R. As part of this project, 1 bridge will be designed by OTHERS. The Vendor will be responsible for the coordination work required to incorporate this bridge design information into the project. The Vendor will also be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and bridge-related road work (bridge approaches, guardrail, etc.) that this bridge will require.
- S. As part of this project, additional road design work will be included (JN 80377). This work will consist of the reconfiguration of the existing intersection of US-24 (Telegraph Road) and Dix-Toledo Highway in Brownstown Township; details on this work are to be provided at the Scope Verification Meeting. Please note that this project may, or may not, be let as a separate project. A decision on this will be made at a later date. (*added per Mark Sweeney, 3/22/05*)
- T. Provide solutions to any unique problems that may arise during the design of the project.
- U. The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

## **II. PROJECT LOCATION**

The project is located on I-75, from the north limit of the Gibraltar Road Ramp A to the south limit of the eastbound Dix Toledo Ramp E in the cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township in Wayne County. The control section mile post is 2.565 for the POB and the POE is mile post 6.769. The project length is 3.791 miles.

The additional design work, as detailed in Part I, Section S above, is located on US-24 (Telegraph Road) from the north limit of Carter Road to the south limit of West Road in Brownstown Township, Wayne County. The control section mile post for the POB is 0.000, and the control section mile post for the POE is 0.534. The length of this additional work is 0.534 miles. *(added per Mark Sweeney, 3/22/05)*

## **III. PROJECT DESCRIPTION**

This project consists of all work related to designing this reconstruction project, including but not limited to the following:

- A. Perform grading and earthwork.
- B. Reconstruct the road and ramps as per the MDOT Pavement Design.
- C. Perform shoulder upgrades, as is required.
- D. Upgrade geometrics to current standards
- E. Perform crown and super elevation modifications.
- F. Upgrade existing under clearances.
- G. Incorporate bridge plans and special provisions (Designed by OTHERS).
- H. Perform design for 14 bridges, including special provisions (see Attachment D).
- I. Potentially perform design for additional bridges, to be determined at Scope Verification.
- J. Adjust and upgrade the existing drainage system.
- K. Adjust and replace existing signs.
- L. Adjust and upgrade signals.
- M. Perform guardrail upgrades.
- N. Clean existing drainage structures and drainage structure leads, as is required
- O. Install, if not already present, sidewalk ramp terminals at all sidewalk street intersection locations.

As part of this project, ~~14~~ 15 bridges *(revised per Mark Sweeney, 3/22/05)* will be designed by the Vendor. The Vendor will also be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and bridge-related road work (bridge approaches, guardrail, etc.) that these bridges will require (see Attachment D).

The bridge locations include, but are not limited to, the following:

CS 82191 - JN 79011

1. R01-82191-1, over GTW RR
2. R01-82191-2, over GTW RR
3. S06-82191-1, NB over Van Horn Road
4. S06-82191-2, SB over Van Horn Road
5. S08-82191, under King Road (*added per Mark Sweeney, 3/22/05*)
6. S10-82191, under I-75 SB Connector
7. S13-82191, SB over US-24 Connector
8. S17-82191-2, SB over North Line Road

CS 82191 - JN 79012

9. S12-82191, under Pennsylvania Road (CPM)

CS 82191 - JN 79013

10. S09-82191, under I-75 NB Connector
11. S14-82191-1, NB over Eureka Road
12. S14-82191-2, SB over Eureka Road
13. S16-82191-1, NB over Allen Road
14. S16-82191-2, SB over Allen Road
15. S17-82191-1, NB over North Line Road

As part of this project, 1 bridge will be designed by OTHERS. The Vendor will be responsible for the coordination work required to incorporate this bridge design information into the project.

The Vendor will also be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and bridge-related road work (bridge approaches, guardrail, etc.) that this bridge will require.

CS 82191 – JN 79175

1. S11-82191, under Sibley Road (Replacement and Widening)

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

#### **IV. PROJECT CONSTRUCTION COST**

A. The estimated cost of construction is:

1.	Base, Surface and Shoulder	\$21,828,000
2.	Geometric Improvements	\$ 49,000
3.	Environmental	\$ 12,000
4.	Improve Alignment (Vertical/Horizontal)	\$ 44,000
5.	Permanent Pavement Markings/Signs/Signals	\$ 274,000
6.	Bridge Replacement/Rehabilitation/CPM (revised per Mark Sweeney 3/22/05)	\$11,792,500
7.	Drainage Adjustment and Improvement	\$ 2,947,000
8.	Joint Repair and Pavement Patching	\$ 2,275,000
9.	Detours and Maintaining Traffic	\$ 3,165,000
10.	Miscellaneous	<u>\$ 4,156,000</u>
	<b>CONSTRUCTION TOTAL</b>	<b>\$46,542,000</b>
	(revised per Mark Sweeney 3/22/05)	

The above construction total is the amount of funding programmed for this project. The Vendor is expected to design the project within the programmed amount.

**If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Vendor will be required to submit a letter justifying the changes in the construction cost estimate.**

#### **V. PROJECT SCHEDULE**

The scheduled Vendor's plan completion date for this project is May 1, 2006. The Vendor shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts. These dates shall be used in preparing the Vendor's Monthly Progress Reports.

##### Target

<u>Date</u>	<u>Task #</u>	<u>Description</u>
	3330	Conduct Design Survey
	3340	Conduct Structure Survey
		Submit Survey Final Deliverables
	3360	Prepare Base Plans
		Submit Base Plans
	3361	Submittal of Preliminary Right-Of-Way Plans
	3370	Prepare Structure Study
	3380	Review Base Plans (by MDOT)
	3390	Develop the Construction Zone Traffic Control Concepts
	3510	Perform Roadway Geotechnical Investigation <del>(by MDOT)</del> (deleted per M. Sweeney, 3/23/05)

<u>Target Date</u>	<u>Task #</u>	<u>Description</u>
		Submit Plans for Utility Review (approximately 50% complete)
		Submit Environmental Permit Information (6 months prior to the Plan Completion Date)
	3522	Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP)
	3530	Conduct Structure Foundation Investigation
	3535	Conduct Structure Review for Architectural and Aesthetic Improvement
		Submit Plans for Utility Review (approximately 50% complete)
		Submit Environmental Permit Information (6 months prior to the Plan Completion Date)
	3540	Develop Construction Zone Traffic Control Plan
	3551	Perform/Review Traffic Signal Operations Plan
	3552	Develop Preliminary Permanent Pavement Marking Plan
	3553	Develop Preliminary Non-Freeway Signing Plan
	3554	Develop Preliminary Freeway Signing Plan
	3570	Prepare Preliminary Structure Plans
	3580	Develop Preliminary Plans
		Submit Preliminary Plans
	3581	Final Right-Of-Way Plans
	3590	Review Preliminary Plans (The Plan Review) (by MDOT)
	3650	Railroad Coordination
	3670	Develop Municipal Utility Plans (impacted by road work)
	3672	Development Special Drainage Structures Plans
	3675	Develop Electrical Plans (impacted by road work)
	3680	Obtain Required Municipal Utility Permits (impacted by road work)
	3821	Complete/Review Traffic Signal Plans
	3822	Complete Permanent Pavement Marking Plan
	3823	Complete Non-Freeway Signing Plan
	3824	Complete Freeway Signing Plan
	3830	Complete the Construction Zone Traffic Control Plan
	3840	Develop Final Plans and Specifications
	3850	Develop Structure Final Plans and Specifications
3/27/06		Submit Final Plan/Proposal Package to MDOT for final review
	3870	Hold Omissions/Errors Check (OEC) Meeting
4/17/06		Omissions/Errors Check (OEC) Meeting (approximate date)
5/1/06		Vendor's Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
7/3/06		Final Deliverables to MDOT

## **VI. PAYMENT SCHEDULE**

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis.

## **VII. MONTHLY PROGRESS REPORT**

On the first of each month, the Vendor Project Manager shall submit a monthly project progress report to **Mark Sweeney**, Project Manager, **Carrie Warren**, the Road Vendor Coordinator and **Kenneth Tiffany**, the Bridge Vendor Coordinator. The monthly progress report shall follow the guidelines in Attachment F.

## **VIII. FORMAT**

Full size plans (cut size 24" x 36") and half size (cut size 11" x 17") consisting of plan sheets and profile sheets will be required. The project will require a ratio (scale) of 1:40; scale and layout of sheets to be discussed with the Road Vendor Coordinator.

Other plan sheets that are required for this project shall be completed by the Vendor. These include, but are not limited to the following plan sheets:

- A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Vendor shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project-specific Special Details.
- E. Construction staging and traffic control plans.
- F. Detail grade sheets for major intersections, ramp gores and critical areas.
- G. Paving details.
- H. Pavement marking plan(s).
- I. Culvert detail sheet(s).
- J. Vicinity and drainage map sheet.
- K. Alignment sheet.

L. Witness and benchmark sheet(s).

M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

## **IX. UTILITIES**

The Vendor shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Vendor shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Vendor shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Vendor shall assist in the review of utility permit requests to ensure compatibility with the project.

## **X. TRAFFIC CONTROL AND MDOT PERMITS**

The Vendor shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Vendor shall be responsible for obtaining up-to-date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Pam Sebenick, Utilities/Permits Section, Real Estate Division at (517) 373-7680.

## **XI. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK**

Any task(s) for which the Vendor is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s). Any questions regarding prequalification should be directed to Phil Brooks, Prequalification Manager, at (517)335-2514.

The Department's prequalification is not a guarantee or warranty of the subcontractors' ability to perform or complete the work subcontracted. The Vendor remains fully responsible to the Department for completion of the work according to the contract as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Vendor to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Vendor by acceptance of the contract. It is further understood that the Vendor's responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the Vendor had handled the work with the Vendor's own organization.

## **XII. VENDOR RESPONSIBILITIES (GENERAL)**

1. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Vendor shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.
2. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
3. **P/PMS TASK 3330 - CONDUCT DESIGN SURVEY**  
Perform surveys as necessary to design this project (see Attachment A). The Vendor's survey shall be as complete and accurate as necessary to:
  1. Calculate and verify plan quantities to the Vendor's standards.
  2. Locate and lay out the future construction of this project.
  3. Perpetuate affected property controlling corners for monument preservation.As part of the design proposal, the Vendor shall present a detailed survey work plan for review, evaluation and acceptance by the MDOT Project Manager. A final survey report for review and approval by the MDOT Survey Unit is required. Acceptance of the survey by MDOT Design Survey does not in any way relieve the Vendor of responsibility and liability for the content of the survey.
4. There shall be a preliminary survey review to this project. This review shall be for horizontal and vertical control. The Vendor shall provide copies of all field work notes as well as least square adjustment analysis to the MDOT Project Manager as soon as it is available.
5. The Vendor will be responsible for providing elevation view sketches at both sides of each and every bridge in the project area. The sketch must show the elevation of the roadway at 2 feet inside of the inside edge of metal and 2 feet outside of the outside edge

of metal, as well as the interior lane lines, crown point, and shoulder edges. The corresponding elevation of the structure underclearance immediately overhead must also be shown. Both directions of I-75 will be handled separately and similarly, as will the cross roads. All underclearance sketches must be shown looking up station.

6. **P/PMS TASK 3340 - CONDUCT STRUCTURE SURVEY**  
See Attachment D as well as Combined Manual Attachment G for details.
7. **P/PMS TASK 3360 - PREPARE BASE PLANS**  
See Combined Manual Attachment G for details.  
Note: A meeting may be scheduled by the MDOT Project Manager after MDOT's review to discuss comments.
8. **P/PMS TASK 3361 - SUBMITTAL OF PRELIMINARY RIGHT-OF-WAY PLANS**  
See Combined Manual Attachment G for details.
9. **P/PMS TASK 3370 - PREPARE STRUCTURE STUDY**  
See Attachment D as well as Combined Manual Attachment G for details.
10. **P/PMS TASK 3380 – REVIEW BASE PLANS (BY MDOT)**  
See Combined Manual Attachment G for details.
11. **P/PMS TASK 3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS**  
See Combined Manual Attachment G for details.
12. **P/PMS TASK 3510 – PERFORM ROADWAY GEOTECHNICAL INSPECTION**  
~~(BY MDOT)~~ *(deleted per M. Sweeney, 3/23/05)*  
See Combined Manual Attachment G for details.
13. Develop the bridge items required for this project according to the enclosed Attachment D.
14. Perform storm sewer design calculations, including appropriate outlets and energy dissipation if necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. Submit all design calculations, drainage maps, and proposed profiles to the MDOT Project Manager for review prior to the Plan Review.
15. The Vendor shall identify the locations of any water main and/or sanitary sewer on the project.

16. If water mains and/or sanitary sewers are present within the project limits, the Vendor shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The Vendor shall submit a report to Steven J. Urda, Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. **If relocation is necessary and water main and/or sanitary sewer work is not part of the Scope of Work, contact the MDOT Project Manager immediately.**
17. **P/PMS TASK 3522 – CONDUCT DRAINAGE STUDY, STORM SEWER DESIGN, AND STRUCTURAL BEST MANAGEMENT PRACTICES (BMP)**  
See Combined Manual Attachment G for details.
18. **P/PMS TASK 3530 - CONDUCT STRUCTURE FOUNDATION INVESTIGATION**  
See Attachment D as well as Combined Manual Attachment G for details.
19. **P/PMS TASK 3535 – CONDUCT STRUCTURE REVIEW FOR ARCHITECTURAL AND AESTHETIC IMPROVEMENT**  
See Attachment D as well as Combined Manual Attachment G for details.
20. **P/PMS TASK 3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**  
See Combined Manual Attachment G for details.
21. **P/PMS TASK 3551 - PERFORM/REVIEW PRELIMINARY TRAFFIC SIGNAL OPERATIONS PLAN**  
See Combined Manual Attachment G for details.
22. **P/PMS TASK 3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN**  
See Combined Manual Attachment G for details.
23. **P/PMS TASK 3553 - DEVELOP PRELIMINARY NON - FREEWAY SIGNING PLAN**  
See Combined Manual Attachment G for details.
24. **P/PMS TASK 3554 - DEVELOP PRELIMINARY FREEWAY SIGNING PLAN**  
See Combined Manual Attachment G for details.
25. **P/PMS TASK 3570 - PREPARE PRELIMINARY STRUCTURE PLANS**  
See Attachment D as well as Combined Manual Attachment G for details.
26. **P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS**  
See Combined Manual Attachment G for details.

- 27. **P/PMS TASK 3581 - FINAL RIGHT-OF-WAY PLANS**  
See Combined Manual Attachment G for details.
- 28. **P/PMS TASK 3590 - REVIEW PRELIMINARY PLANS (THE PLAN REVIEW) (BY MDOT)**  
See Combined Manual Attachment G for details.
- 29. **P/PMS TASK 3650 – RAILROAD COORDINATION**  
See Combined Manual Attachment G for details.
- 30. **P/PMS TASK 3670 - DEVELOP MUNICIPAL UTILITY PLANS (impacted by road work)**  
See Combined Manual Attachment G for details.
- 31. **P/PMS TASK 3672 – DEVELOPMENT OF SPECIAL DRAINAGE STRUCTURES PLANS**  
See Combined Manual Attachment G for details.
- 32. **P/PMS TASK 3675 - DEVELOP ELECTRICAL PLANS (impacted by road work)**  
See Combined Manual Attachment G for details.
- 33. **P/PMS TASK 3680 – OBTAIN REQUIRED MUNICIPAL UTILITY PERMITS (impacted by road work)**  
See Combined Manual Attachment G for details.
- 34. **P/PMS TASK 3821 - COMPLETE/REVIEW TRAFFIC SIGNAL PLANS**  
See Combined Manual Attachment G for details.
- 35. **P/PMS TASK 3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN**  
See Combined Manual Attachment G for details.
- 36. **P/PMS TASK 3823 - COMPLETE NON-FREEWAY SIGNING PLAN**  
See Combined Manual Attachment G for details.
- 37. **P/PMS TASK 3824 - COMPLETE FREEWAY SIGNING PLAN**  
See Combined Manual Attachment G for details.
- 38. **P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**  
See Combined Manual Attachment G for details.
- 39. **P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS**  
See Combined Manual Attachment G for details.

40. **P/PMS TASK 3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**  
See Attachment D as well as Combined Manual Attachment G for details.
41. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**  
See Combined Manual Attachment G for details.  
The interval for plotting cross-sections and developing the grade book shall be 50 feet.  
The intervals for critical areas shall be 25 feet.
42. **P/PMS TASK 5010 - CONSTRUCTION PHASE ENGINEERING AND ASSISTANCE**  
The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
43. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).
44. The Vendor shall be required to prepare and submit a CPM network for the construction of this project. See Attachment E for details.
45. **CRASH ANALYSIS:** Perform a crash analysis and determine the recommend countermeasures, (see Attachment B for details) This shall include, but shall not be limited to, performing the crash analysis, which shall include the last 3 years of reliable data for the analysis period. If there has been a fatality within those 3 years, then the analysis shall incorporate the last 7 years of reliable data. The Vendor will be furnished 3 years of data. If 7 years of data is required, the Vendor shall request, in writing, the additional crash data from the MDOT Project Manager (requests may take up to two weeks from the date the request is received to fill).
46. Determine countermeasures based on the crash analysis and provide a detail drawing explaining each recommendation. Determine the construction cost estimate for each countermeasure using MDOT Pay Items. Summarize the countermeasures for each crash pattern individually.
47. Review and document the roadside safety related items (i.e. guardrail, barriers, attenuators, etc.) which need to be modified or included in the project. Documentation to include location, existing type and condition, and the recommended treatment.
48. The Vendor representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees. MDOT will provide

and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.

49. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.
50. Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (i.e. NPDES, DEQ, etc), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.
51. Attend any project-related meetings as directed by the MDOT Project Manager.
52. The Vendor shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans, and respond within 2 weeks from receipt of the permit.
53. The MDOT Project Manager shall be the official MDOT contact person for the Vendor **and shall be made aware of all communications regarding this project.** The Vendor must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.
54. The Vendor shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.
55. The Vendor shall be required to coordinate the road design with the Lansing Bridge Unit's Bridge Design (for structures designed by OTHERS) and incorporate bridge plans and special provisions in final design.
56. Submit all design files electronically at all submittals.

## **XII. MDOT RESPONSIBILITIES (GENERAL)**

- A. Schedule and/or conduct the following:
  1. Project related meetings.
  2. The Plan Review
  3. Utility Meetings.
  4. Quantity summary sheets and final item cost estimates.
  5. Packaging of plans and proposal.
- B. Furnish Special Details and pertinent reference materials.
- C. Furnish prints of an example of a similar project and old plans of the area, if available.

- D. Supply information on existing pavement structure as necessary.
- E. Coordinate any necessary utility relocation(s).
- F. Furnish pavement core information (Vendor shall place information on plan sheets).
- G. Furnish soil boring information as necessary (Vendor shall place information on plan sheets).
- H. Pavement design.
- I. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

## **XII. VENDOR PAYMENT**

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the CE activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

Reimbursement for overtime hours will be limited to time spent on this project in excess of forty hours per week. Any variations to this rule should be included in the price proposal

**ATTACHMENT A**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**SURVEY SCOPE OF WORK**

Survey Limits: As needed for Design, Right of Way, and Construction

**NOTES:** The Vendor shall discuss the scope of this survey with an MDOT Region Surveyor or Lansing Design Support Area Surveyor before submitting a proposal.

The Vendor surveyor must contact the Region or TSC Traffic and Safety Engineer for work restrictions in the project area prior to submitting a proposal.

A **detailed Survey Work Plan** with a **spreadsheet estimate** of hours by specific survey task such as traversing, leveling, mapping, etc., **must** be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

**GENERAL REQUIREMENTS:**

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.
3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, and/or Ground Control (Photogrammetric) must be completed by a survey firm which is pre-qualified by MDOT.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998. Please contact the Design Survey office to clarify any specific questions regarding these standards.
5. Vendors must obtain all necessary permits required to perform this survey on any public and/or private property, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section.

6. The Vendor must contact any and all Railroads prior to commencing field survey on railroad property. The cost for any permit, flaggers and/or training that is required by the Railroad will be considered as a direct cost, but only if included in the Vendor's proposal.
7. The Vendor must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
8. Vendors are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
9. Measurements, stationing, recorded data, and computations must be in international feet, unless specified otherwise by the Project Manager.
10. It is appropriate to utilize the same horizontal and vertical datums used in recent and/or future projects in the "corridor." Otherwise, coordinate values shall be based upon the Michigan State Plane coordinate system NAD83 if available within four miles. If not, a local project coordinate control system is acceptable. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88) if control is available within four miles. If not, existing MDOT plan datum is acceptable. **Other datums must be approved by the MDOT Design Division, Supervising Land Surveyor.** A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the MDOT Survey Vendor Coordinator or Region Surveyor for review and acceptance as soon as it is available.
11. The survey notes must be submitted to the Design Survey Unit in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as are needed to contain all of the required documents and Compact Discs (CD's). **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**
12. Each portfolio must be labeled on the outside as in the following example:

Survey Notes for:

Route, Location and Project Limits [I-94 under Beaubien Street ]

Control Section [S06 of 82024] Job Number [45197D] Date [ *of submittal* ]

By [ *Name of Firm* ]

Michigan Professional Surveyor [                      ] License # [                      ]

13. Each submittal is to be divided into five sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, Mapping, and Miscellaneous.**
  - a. The Administrative section will include the following items: a completed copy of the MDOT Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL"; the limits of the survey and original survey scope as determined by the Vendor Surveyor

and Design Engineer; a complete synopsis of the survey **that shall include, but not be limited to** horizontal and vertical control datums used; methodology; a complete discussion of government corners recovered, perpetuated or otherwise used as part of the survey; problems encountered; and a statement from the Vendor surveyor supervising the project certifying compliance with Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998; as well as documentation of all project specific meetings and /or conversations with MDOT Survey personnel.

- b. The Alignment section will contain a sketch and/or drawing of the alignment, witnesses and stationing of alignment points set or found; an explanation of how the alignment was determined, whether best fit or legal; and all supporting documentation. The alignment data must be submitted both hardcopy and electronically.
  - c. The Control section must contain the data collected and copies of all research documents used to establish the **horizontal and vertical** reference systems for the project, and must include a thorough written explanation describing how the systems were established. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both traverse and benchmarks, a separate listing of control point coordinates and witnesses for mapping and construction staking of the project. A complete Benchmark list with datum, station and offset, elevation, and description of each benchmark shall also be included. This information must be submitted in hardcopy and ASCII electronic file format on Compact Discs (CD's). Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section.
  - d. The Property section contains all information that is utilized regarding the real property affected by the project. It also includes any and all property ties necessary to establish the Right of Way and/or acquire property if required by the project. This may include copies of all **recorded** Land Corner Recordation Certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners, as well as surveyed coordinates.
  - e. The Mapping section must consist of electronic data only. The final planimetric mapping file must be submitted in .PDF format. Raw survey data is not required.
  - f. The Miscellaneous section contains any information not included in the previous sections. The project surveyor's report should specify any items included in this section.
14. Each category of survey must be packaged separately (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section and job number. CD's must be labeled with the control section, job number, data type and file names.

15. The Vendor representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees.
16. The MDOT Project Manager is the official contact for the Vendor. The Vendor must send a copy of all project correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions, in regard to this project, should be directed to a Survey Vendor Coordinator or MDOT Region Surveyor.

At the completion of this survey for this project, all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must also be sent to the MDOT Project Manager for Design.

## **WORK RESTRICTIONS**

The Vendor must call the MDOT Region or TSC Traffic and Safety Engineer before beginning work to inform him of surveying activity in the area. The Vendor is advised to discuss Traffic Control scenarios with the Traffic and Safety Engineer prior to submitting a proposal.

Traffic shall be maintained by the Vendor throughout the project in accordance with Sections 812 and 922 of the Standard Specifications for Construction, 2003 edition, and any supplemental specifications. All traffic control devices shall conform to the current edition, as revised, of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

The Vendor must use MDOT standard lane closure "maintaining traffic" typicals for any and all lane closures and shoulder closures. Typical MDOT traffic control diagrams are available on line at <http://www.mdot.state.mi.us/tands/plans.cfm>

## **FIELD SURVEY**

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The Vendor surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must be submitted to the MDOT Project Manager and Survey Vendor Coordinator within two weeks of this meeting.

## **GOVERNMENT CORNERS**

Any PLSS corners within the project limits must be recovered or established and tied to the project coordinate system.

All PLSS corners must be recorded in accordance with PA 74 of 1970, as amended and all applicable administrative rules. A copy of each recorded Land Corner Recordation Certificate must be submitted to the MDOT Design Survey Office as part of the final report. All PLSS corners located in hard surface roads must be protected by a monument box, regardless of impending construction. The Vendor shall provide to the Survey Project Manager a list of any affected Government or Property Controlling Corners in the detailed work plan for discussion or approval.

The Vendor surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

## **FINAL REPORT: DELIVERABLES**

The final report for this project shall include the following:

1. In the first pocket of the first portfolio, MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL."
2. The project's Professional Surveyor's Report on company letterhead consisting of the following:
  - a. A comprehensive report, written and signed by the project's Professional Surveyor, of the work performed on this project.
  - b. The source and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.
  - c. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
3. Documentation of horizontal and vertical datum sources.
4. Least squares analysis for horizontal and vertical control.
5. Coordinate and witness lists for the horizontal alignment ties, government corners, traverse control points, and bench marks.

6. A sketch of the alignment(s) with reference points and angle of crossing (if appropriate), stationing, horizontal coordinates, curve data, and a station equation to existing stationing if different. **The alignment must be clearly noted as legal or best-fit.**
7. Control sketch with control points, government corners and alignment plotted.
8. All field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for this project. All electronic survey data files shall be submitted on Compact Discs only, specifically labeled. No paper copy of raw survey data is required.
9. Legible copies of all **recorded** Land Corner Recordation Certificates (with Liber and Page number) filed or used for the performance of this survey, and for any PLSS corners, including Property Controlling Corners, which may be disturbed by construction.
10. It is the responsibility of the Vendor to insure that all electronic files submitted to MDOT conform to the required format and all documents are legible.
11. The Vendor must organize and label the various sections of the portfolios as required by the MDOT Design Surveys *Standards of Practice* dated April 1, 1998.
12. It is not necessary to submit hardcopy mapping data in the survey portfolio for a Vendor survey/Vendor design in the same authorization. Final planimetric map must be submitted in .PDF format.
13. It is desirable to limit paper and to include as much electronic data as possible on Compact Disc, including scanned items, to facilitate future electronic storage and transmission of survey data. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**

**ATTACHMENT B**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**Crash Analysis Reports**

The Vendor shall provide MDOT with a Crash Analysis Report, which shall detail the safety performance of the project location (includes not only the mainline, but all ramps, major and minor intersections, and crossovers within the project limits), and provide detailed graphic depiction of countermeasures, and cost/benefit analysis for crash concentration locations.

The Crash Analysis Report shall, at a minimum, compare the project location features (mainline, ramps, major intersections, minor intersections and cross overs) to regional averages, identify crash concentration locations, examine crash concentration locations for crash patterns and provide countermeasures for correctable crash patterns. The Vendor shall combine a thorough review of computer-based crash records with field reviews of the roadway's characteristics (geometric and operational features shall be specifically noted), to identify crash concentration locations. The Vendor shall provide a Draft Crash Analysis Report and upon review and comment by MDOT, the Vendor shall make any changes identified and submit a Final Crash Analysis Report.

The Vendor shall at a minimum review and analyze the most recent three years of MDOT crash data. If there is a fatality within those three years, the Vendor shall review and analyze an additional 7 years of crash data. For the analysis, the Vendor shall stratify the data by location and the crash data shall also be aggregated by similar roadway segment characteristics. The Vendor shall quarry SEMCOG to determine regional crash averages which will provide a normative measure of comparison to aid in the identification of crash concentration locations.

The Vendor shall identify crash concentration locations and determine crash patterns. Based on the crash patterns identified for each crash concentration location the Vendor shall develop proposed crash countermeasures. The countermeasures shall be graphically depicted, to scale, with sufficient detail to determine the countermeasures impact to the existing roadway and the proposed roadway improvement.

The countermeasures may range from simple sign / marking / signal modifications up through substantial reconstruction. The Vendor shall present countermeasures stratified into short and long-term solutions. The Vendor shall provide a construction cost estimate for each countermeasure using MDOT Pay Items and shall clearly identify any right-of-way impacts a countermeasure may have. The Vendor shall provide a full cost/benefit analysis for each countermeasure. The Vendor shall also evaluate the crash impacts on design exceptions sought.

**ATTACHMENT C**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**SCOPE OF WORK FOR DRAINAGE STUDY**

The Vendor is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required. If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

**Work Steps:**

1. Prepare a typed report summarizing the drainage affected by the project. For every culvert carrying natural drainage within the MDOT Right-of-Way, provide the following information:
  - a. Stream name
  - b. Exact location of the culvert, including Section, Town, Range, and Township
  - c. Size, type, and condition of culvert
  - d. Any evidence of scour or erosion
  - e. Any evidence that the structure is undersized
  - f. Any county drains
  - g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
  - h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
  - i. Type of work proposed, including existing and proposed lengths
2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.
3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer - Hydraulics/Hydrology.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

**ATTACHMENT D**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**BRIDGE SCOPE OF WORK**

**JN 79011**

**R01 of 82191-1**  
**I-75 NB over GTW RR**

**R01 of 82191-2**  
**I-75 SB over GTW RR**

**S06 of 82191-1**  
**I-75 NB over Van Horn Rd**

**S06 of 82191-2**  
**I-75 SB over Van Horn Rd**

**S08 of 82191**  
**I-75 under King Road**  
*(added per Mark Sweeney, 3/22/05)*

**S10 of 82191**  
**I-75 under I-75 SB Connector**

**S13 of 82191**  
**I-75 SB over US-24 Connector**

**S17 of 82191-2**  
**I-75 SB over North Line Road**

**JN 79012**

**S12 of 82191**  
**Pennsylvania Road over I-75**

**JN 79013**

**S09 of 82191**  
**I-75 under I-75 NB Connector**

**S17 of 82191-1**  
**I-75NB over North Line Road**

**S14 of 82191-1**  
**I-75 NB over Eureka Road**

**S14 of 82191-2**  
**I-75 SB over Eureka Road**

**S16 of 82191-1**  
**I-75 NB over Allen Road**

**S16 of 82191-2**  
**I-75 SB over Allen Road**

## **I. DESCRIPTION OF WORK**

### **A. JN 79011**

1. R01 of 82191-1: The work for this structure shall consist of superstructure replacement, substructure repair and approach work.
2. R01 of 82191-2: The work for this structure shall consist of superstructure replacement, substructure repair and approach work.
3. S06 of 82191-1: The work for this structure shall consist of superstructure replacement, substructure repair and approach work.
4. S06 of 82191-2: The work for this structure shall consist of superstructure replacement, substructure repair and approach work.
5. S08 of 82191: The work for this structure shall consist of structure replacement. *(added per Mark Sweeney, 3/22/05)*
6. S10 of 82191: The work for this structure shall consist of a shallow concrete overlay, partial paint, substructure repair, and approach work.
7. S13 of 82191: The work for this structure shall consist of a shallow concrete overlay, barrier replacement, substructure repair, partial paint and approaches.
8. S17 of 82191-2: The work for this structure shall consist of a deep concrete overlay, substructure repair, partial paint and approach work.

### **B. JN 79012**

1. S12 82191: The work for this structure shall consist of deck patching, railing replacement, substructure repair and joint replacement.

### **C. JN 79013**

1. S09 of 82191: The work for this structure shall consist of a shallow concrete overlay, partial paint, substructure repair and approaches.
2. S14 of 82191-1: The work for this structure shall consist of a shallow concrete overlay, rocker realignment, railing repair, P&H replacement, partial paint, substructure repair, and approach work.

3. S14 of 82191-2: The work for this structure shall consist of a shallow concrete overlay, rocker realignment, railing repair, P&H replacement, partial paint, substructure repair, and approach work.
4. S16 of 82191-1: The work for this structure shall consist of a thin epoxy overlay, deck patching, joints, partial paint, and substructure repair.
5. S16 of 82191-2: The work for this structure shall consist of a thin epoxy overlay, deck patching, joints, partial paint, and substructure repair.
6. S17 of 82191-1: The work for this structure shall consist of deck patching, joints replacement, substructure repair, and partial paint.

## **II. VENDOR RESPONSIBILITIES**

The scope of design services to be done by the Vendor is as follows:

- A. Prior to submitting Proposal for Indefinite Delivery of Services, inspect the job site to determine the need for any additional work not included in the “Description of Work”. If possible changes to the description of work are needed, submit a letter with your proposal detailing the changes that are recommended. (MDOT will not be reimbursing the Vendor for the initial site visit, as the Vendor is not yet authorized to do work.)
- B. Consider other alternatives, at the study phase that may deviate from the “Description of Work” to determine the most cost effective option. The vertical underclearance must be considered. A design exception, if required, should be submitted to MDOT with the structure study.
- C. **P/PMS TASK 3340 - CONDUCT STRUCTURE SURVEY**  
See Attachment D as well as Combined Manual Attachment G for details.
- D. Preparation of both contract plans and bid item quantities using standard English units, as applicable. Stand-Alone Estimator’s Worksheet (SAEW) shall be used to generate a bid item quantity database in both text (TXT) and comma separated value (CSV) formats.
- E. Provide solutions to any unique problems that may arise during the design of this project or that may affect the constructability of this project.
- F. The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
- G. Preparation of any specifications and/or special provisions required to supplement MDOT’s Standard Specifications for Construction.

- H. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Vendor shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.
- I. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
- J. **P/PMS TASK 3370 - PREPARE STRUCTURE STUDY**  
A detailed cost estimate is required. See Combined Manual Attachment G for details.
- K. **P/PMS TASK 3570 - PREPARE PRELIMINARY STRUCTURE PLANS**  
See Combined Manual Attachment G for details.
- L. **P/PMS TASK 3530 - CONDUCT STRUCTURE FOUNDATION INVESTIGATION**  
See Combined Manual Attachment G for details.
- M. **P/PMS TASK 3535 – CONDUCT STRUCTURE REVIEW FOR ARCHITECTURAL AND AESTHETIC IMPROVEMENT**  
See Combined Manual Attachment G for details.
- N. **P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS**  
See Combined Manual Attachment G for details.
- O. **P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS**  
See Combined Manual Attachment G for details.
- P. **P/PMS TASK 3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**  
See Combined Manual Attachment G for details.
- Q. The Vendor shall submit a Pre-Final Design Package which shall consist of the following: all final detail sheets approximately 75% complete, all special provisions revised as requested at The Plan Review, and an updated cost estimate. Comments from The Plan Review should be reflected in all sheets. Slab and Screed sheets and Bar Schedule sheets are not required.
- R. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**  
See Combined Manual Attachment G for details.

- S. The Vendor representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Grade Inspection.
- T. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.
- U. Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring permits (i.e. NPDES), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.
- V. Attend any project-related meetings as directed by the MDOT Project Manager.
- W. The MDOT Project Manager shall be the official MDOT contact person for the Vendor. The Vendor must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records. The MDOT Project Manager shall be made aware of all communications regarding this project.
- X. The Vendor shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.
- Y. The Vendor shall coordinate the maintenance of traffic plan with JN 79672.

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

### **III. PROJECT CONSTRUCTION COST**

- A. The estimated cost of construction for JN 79011 is:

R01-1 of 82191	\$1,544,083
R01-2 of 82191	\$1,498,237
S06-1 of 82191	\$1,383,260
S06-2 of 82191	\$1,397,181
S08 of 82191	\$2,061,000 ( <i>added per M. Sweeney, 3/22/05</i> )
S10 of 82191	\$ 360,292
S13 of 82191	\$ 668,658

S17-1 of 82191	\$ 318,462
	<u>\$9,231,173</u>

B. The estimated cost of construction for JN 79012 is:

S12 of 82191	\$ 346,460
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C. The estimated cost of construction for JN 79012 is:

S09 of 82191	\$ 301,992
S14-1 of 82191	\$ 572,022
S14-2 of 82191	\$ 559,670
S16-1 of 82191	\$ 247,691
S16-2 of 82191	\$ 276,470
S17-1 of 82191	<u>\$ 257,031</u>
	\$2,214,876

<b>TOTAL</b>	<b>\$11,792,509</b> (revised per M. Sweeney, 3/22/05)
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The above construction total is the amount of funding programmed for this project. The Vendor is expected to design the project within the programmed amount. If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Vendor may be required to submit a letter justifying the changes in the construction cost estimate.

## **XII. MDOT RESPONSIBILITIES (GENERAL)**

- A. Schedule and/or conduct the following:
  - 1. Project related meetings.
  - 2. Grade Inspection.
  - 3. Utility Meetings.
  - 4. Quantity summary sheets and final item cost estimates.
  - 5. Packaging of plans and proposal.
- B. Furnish Special Details and pertinent reference materials.
- C. Furnish prints of an example of a similar project and old plans of the area, if available.
- D. Coordinate any necessary utility relocations.
- E. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

**ATTACHMENT E**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**CONSTRUCTION CRITICAL PATH NETWORKS**

**I. INTRODUCTION**

The Vendor is required to submit a Construction Critical Path Network at various points in the design process. Refer to the following:

P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS

P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN

P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS

Construction Critical Path Networks are often needed to develop the progress schedule for a project. They are required on any project designated to include an Incentive/Disincentive or Special Liquidated Damages clause. Construction Critical Path Networks are also recommended for projects with the following characteristics:

1. New construction.
2. Major reconstruction or rehabilitation on an existing roadway that will severely disrupt traffic.
3. Unique or experimental work.
4. More than one construction season.
5. Complex staging (multiple stages with traffic shifts).

As noted in MDOT's Construction and Technology Instructional Memorandum 1997-7, Progress Schedule Determinations/Critical Path Rates,

*“Preparation of a Critical Path is a requirement on all Vendor-designed projects, regardless of the project type or complexity.”*

The MDOT Resident Engineer assigned to the project should be consulted when developing Construction Critical Path Networks.

MDOT requires the precedence diagramming method. The Vendor will submit this network in MPX version 4.0.

## **I. NETWORK DEVELOPMENT**

The network will be defined using the following steps.

1. Activity definition.
2. Activity sequencing.
3. Duration estimation.
4. Schedule development.

### **1. ACTIVITY DEFINITION**

The Vendor will define the specific activities in enough detail so that the proper objectives will be met. The Vendor must identify assumptions (those factors considered true, real or certain). Supporting detail for the activities should be documented and organized as needed to simplify the review of the activities by MDOT personnel.

The Construction Critical Path Network must start with the “Letting Date” as the first activity and terminate with the “End of Project” as the finish activity.

A sufficient number of activities will be required with sufficient detail so that the controlling construction operation(s) may be identified. Notation on each activity shall include a brief work description and activity time duration.

### **2. ACTIVITY SEQUENCING**

Activity sequencing involves identifying and documenting interactivity dependencies. The Vendor must sequence activities accurately to support later development of a realistic and achievable construction schedule. Two types of dependencies should be considered. Mandatory dependencies are inherent in the nature of the work being done, such as construction sequencing. Discretionary dependencies are based on a knowledge of the work to be done. Constraints are used to show how the activities relate to each. The Vendor must include documentation supporting all discretionary dependencies used in the project. All activities must lead to another activity. Only Start to Start, Finish to Finish and Finish to Start relationships will be allowed. All logic shall show how the given activity is dependent on its preceding activities.

### **3. DURATION ESTIMATION**

After the Vendor has sequenced the activities, the Vendor should determine the activity duration. Activity duration estimating involves assessing the number of work periods likely to be needed to accomplish each activity. Duration (working days): No activity will have a duration greater than 20 working days unless approved by the Engineer. Activities that will be allowed to exceed 20 working days include, but are not limited to, working drawing approvals or other activities not under the control of the Contractor. If requested by the Engineer, the Vendor shall explain the reasonableness of activity time

durations. The approved MDOT production rates will be used in estimating activity duration. These are available in the Supplemental Information section of this attachment. The Vendor must document and submit all assumptions made during the duration estimation to MDOT.

#### **4. SCHEDULE DEVELOPMENT**

The activity sequencing, duration estimations and the calendars are combined to create the construction schedule. During the development of the schedule the Vendor will verify:

1. The required schedule to build the project.
2. The constructability of the project.
3. If the maintaining traffic scheme will work.
4. If seasonal limitations will affect the construction.
5. Any other project specific considerations.

The MDOT Calendars will be used by the Vendor in developing the network. The calendars are based on a 4, 5 or 6 day work week. The MDOT Calendars are included in the Supplemental Information section of this attachment.

At this point there should be no negative float in the network. If there is, there is an error in the network and the error must be corrected before network submittal.

All summary tasks shall be removed prior to submittal to MDOT Project Manager

### **III. DELIVERABLES**

After this final step the design Vendor will submit the finished CPM schedule to MDOT

#### **1. Documents**

- A. 11" x 17" plot of the network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks.
- B. Work Day / Completion Date Determination Worksheet.
- C. List of any other assumptions or controlling factors used in creating the network. For example, permit or maintaining traffic restrictions.

#### **2. Electronic Format**

This section sets the requirements for the electronic submittal of the Vendor's Construction Network. All networks shall be submitted on a 3.5 inch floppy disk (or via E-mail) using one of the following formats:

**Standard Electronic Media Format:** This is a standard ASCII text file containing the data elements below, in the order specified. This file can be created using any text editor or word processing application (i.e., MS-Word, WordPerfect, Notepad, Write) but must be saved as an ASCII file.

The **first line** will provide a descriptive header describing the submittal and containing:

Control Section  
Job Number  
Route  
Vendor name  
Date of Submittal

The next line will be **blank**, followed by multiple data lines.

Each **data line** will contain one record pertaining to one task of the job. Separate data fields by a comma. Fields within each task line are as follows:

(Note that the term "task" is synonymous with "activity." Leave fields that are not required blank)

- (1) Task # (Job # followed by a hyphen followed by this task's unique 4 digit task number. This is the Preceding Event Activity Code)
- (2) Description of Task, Milestone or Hammock, blank if this record is a constraint
- (3) Calendar (see attached list)
- (4) Duration of task, blank for constraints
- (5) Task # of the next task (Succeeding Event) - leave blank if this record is not a constraint or hammock
- (6) Type of constraint (FS, SS, FF) - leave blank if this record is not a constraint.
- (7) Delay, if required
- (8) Original "Baseline" Start Date
- (9) Original "Baseline" Finish Date
- (10) Current (forecast) Start Date (early start)
- (11) Current (forecast) Finish Date (early finish)
- (12) Estimated completion date (if different from early start + current duration)
- (13) Late Start Date
- (14) Late Finish Date

- (15) Actual Start Date
- (16) Actual Finish Date

Example - each line contains the following:

Task # (preceding event), Description, Calendar, Duration, Next Task # (succeeding event), Constraint Type, Delay, Baseline Start, Baseline Finish, Early Start, Early Finish, Estimated Completion Date, Late Start, Late Finish, Actual Start, Actual Finish, Total Float.

- B. **Primavera Project Planner (P3) 2.0 Export Procedure:** Users who have Primavera Project Planner (P3) version 2.0 can automatically create an export file by following the below export procedure below. **Users having an older version of Primavera may use the applications export feature only if they are able to include all the data elements listed in the version 2.0 format.**

1. Choose Tools, Project Utilities, **EXPORT**
2. Click **ADD**, then click **OK** to accept the next sequential ID number, or type a unique number to identify the specifications and click **OK**
3. Enter a description for the specification in the Title field
4. Specify data items to export

#### **Activities**

- Select **Contents of List**
- Use the Description column to specify which data items to export
- To add items, click the right mouse button in the Description column and choose from the list. Suggested Items include: **Activity ID, Activity Description, Actual Start, Actual Finish, Calendar ID, Early Start, Early Finish, Late Start, Late Finish, Original Duration.**
- Select **All Current, All Target, or All Target2**
- Set Description Length to 48

**OR**

#### **Constraints**

- Select **Successor relationships** - Choose this option to export Activity IDs and their corresponding successors only. Lags and relationship types will also be displayed in this output file.

5. Click **FORMAT** in Export Dialog Box
6. In the Output file section, enter a new name and path (ex. A:\actexp or A:\conexp). Do not include a file extension.

7. In the type field, click the minimize button and choose the [**PRN**] - **ASCII** file format for the output file.
8. Select **CALENDAR** for Date Format
9. Set ASCII Output Field Separation to **1** and Blank column width to **0**
10. Click **RUN**
11. In the Output Options dialog box, click on **OK**

**NOTE: A COMPLETED FILE EXPORT WILL CONSIST OF 2 EXPORT FILES (ACTIVITIES & CONSTRAINTS)**

- C. **Microsoft Project Export Procedure:** Users of Microsoft Project Version 4.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu
  2. In the Save File as Type box Select **MPX 4.0**
  3. On the drive box select a: or whichever drive is the 3.5" Floppy drive
  4. Click on **OK**
- This saves the file in MPX format.
- D. **Primavera Sure Track:** Users of Sure Track Version 2.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu
  2. In the filename box input a filename
  3. In the Save File as Type box Select **MPX**
  4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
  5. Click on **OK**
- This saves the file in MPX format
- E. **Scitor Project Scheduler 7 Export Procedure:** Users of Scitor Project Scheduler Version 7 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu
  2. In filename box select a filename
  3. In the Save File as Type box Select **MPX**
  4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
  5. Click on **OK**
- This saves the file in MPX format
- F. **Export Files with Other Scheduling Applications:** Most scheduling packages have export functions similar to those described above. If the Vendor chooses to

use packages with export capabilities, they shall include all items listed in the Standard Media Format in a text or ASCII type file.

#### IV. SUPPLEMENTAL INFORMATION

##### A. MDOT CRITICAL PATH-CONSTRUCTION TIME ESTIMATES

###### Drainage

###### Cross Culverts

Rural Highways	40 m/day
Expressways	50 m/day
Large Headwalls	5 days/unit
Slab or Box Culverts	5 days/pour
Plowed in Edge Drain(production type project)	4500 m/day
Open Graded Underdrain (production type project)	1200 m/day

###### Sewers

0m-5m (up to 1500mm)	40 m/day
0m-5m (over 1500mm)	25 m/day
5m-over (up to 1500mm)	25 m/day
5m-over (over 1500mm)	20 m/day
Jacked-in-place	13 m/day
including excavation pit & set up	min. 5 days
Tunnels	
hand mining	8 m/day
machine mining	20 m/day
including excavation pit & set up	min. 5 days

###### Manholes

###### Catch Basin

3 units/day  
4 units/day

###### Utilities

Water Main (up to 400mm)	100 m/day
Flushing, Testing & Chlorination	4 days
Water Main (500mm-1050mm)	25 m/day
Flushing, Testing & Chlorination	5 days
Order & Deliver 600 mm HP Water Main	50 days/order
Gas Lines	100 m/day

###### Earthwork and Grading

Embankment (CIP)	1500 m <sup>3</sup> /day	5300 m <sup>3</sup> /day
Excavation and/or Embankment (Freeway)	1500 m <sup>3</sup> /day	9200 m <sup>3</sup> /day
Excavation and/or Embankment (Reconstruction)	750 m <sup>3</sup> /day	3800 m <sup>3</sup> /day
Embankment (Lightweight Fill)	300 m <sup>3</sup> /day	600 m <sup>3</sup> /day
Muck (Excavated Waste & Backfill)		1500 m <sup>3</sup> /day

###### Metro Exp

###### Rural

Excavation (Widening)	600 m/day
Grading (G & DS)	750m/day
Subbase and Selected Subbase (up to 7.4m)	600 m/day
Subbase and Selected Subbase (7.4 m & over)	450 m/day
Subgrade Undercut & Backfill	1500 m3/day
Subbase & Open-Graded Drainage Course	450 m/day

### **Surfacing**

Concrete Pavement (7.3m)	450 m/day
Including Forming & Curing	min. 7 days
Bituminous Pavement (7.3m)	1200 m/day/course
Concrete Ramps (4.9m)	300 m/day
Including Forming & Curing	min. 7 days
Curb (1 side)	750 m/day
Concrete Shoulder-Median	1200 m2/day
Bituminous Shoulders (1 side per course)	750 m/day
Sidewalk	180 m2/day
Sidewalk (Patching)	65 m2/day

### **Structures**

Sheeting (Shallow)	30 m/day
General Excavation at Bridge Site	750 m3/day
Excavation for Substructure (Footings)	1 unit/day
Piles (12m)	15 piles/day
Substructure (Piers & Abutments)	5 days/unit
Order and Delivery of Beams	
Plate Girders	100-120 days/order
Rolled Beams	90-120 days/order
Concrete Beams	50 days/order
Erection of Structural Steel	3 days/span

### **Bridge Decks**

Form & Place Reinforcement (60m Structure)	15 days
Pour Deck Slab (1 1/5 days/pour)	2 days/span
Cure	14 days
2 Course Bridge Decks	
Add 9 days for Second Course Latex	
Add 12 days for Second Course Low Slump	
Sidewalks and Railings	
Sidewalks and Parapets	5 days/span
Slip Formed Barriers	2 days/span
Clean Up	10 days
Pedestrian Fencing	

Shop Plan Approval & Fabrication Erection	1-2 months 1 week/bridge
Rip Rap Placement Bucket Dumped Bucket Dumped and Hand Finished	385 m <sup>3</sup> /day 131-523 m <sup>3</sup> /day
<b>Retaining Walls</b>	1 Panel/day min. 10 days
<b>Railroad Structures</b> Grade Temporary Runaround Ballast, Ties & Track Place Deck Plates Waterproof, Shotcrete & Mastic	750 m <sup>3</sup> /day 50 m/day 5 days/span 5 days/span
<b>Railroad Crossing Reconstruction</b>	10-15 work days (depends on if concrete base is involved)
<b>Temporary Railroad Structures</b> Order & Deliver Steel Erect Steel Ties and Track	55 days/order 1 day/span 3 days/span
<b>Pumphouse</b> Structure Order & Deliver Electrical & Mechanical Equipment Install Electrical & Mechanical Equipment	30 days/m 90 days 30 days
<b>Miscellaneous</b> Removing Old Pavement Removing Old Pavement for Recycling (7.3m) Crushing Old Concrete for 6A or OGDC Removing Trees (Urban) Removing Trees (Rural) Removing Concrete Pavement Removing Sidewalk Removing Curb & Gutter Removing Bituminous Surface Conditioning Aggregate Bituminous Base Stabilizing Ditching	60 m/day 450 m/day 1350 mtons/day 15 units/day 30 units/day 450 m <sup>2</sup> /day 250 m <sup>2</sup> /day 450 m/day 1600 m <sup>2</sup> /day 900 m/day 2500 m <sup>2</sup> /day 600 m/day

Trenching for Shoulders	750 m/day
Station Grading	610 m/day
Clearing	8000 m <sup>2</sup> /day
Restoration (Topsoil, Seeding, Fertilizer & Mulch)	1650 m <sup>2</sup> /day
Sodding	2100 m <sup>2</sup> /day
Seeding	40000 m <sup>2</sup> /day
Guard Rail	230 m/day
Fence (Woven Wire)	360 m/day
Fence (Chain Link)	150 m/day
Clean Up	600 m/day
Concrete Median Barrier	300 m/day
Cure	min. 7 days
Reroute Traffic (Add 4 days if 1st item)	1 day/move
Concrete Glare Screen	450 m/day
Light Foundations	6 units/day
Order & Delivery	6-8 week/order
Remove Railing & Replace with Barrier (1 or 2 decks at a time)	4 days/side
Longitudinal Joint Repair	1600 m/day
Crack Sealing	4800 m/day
Joint and Crack Sealing	500 m/day
Repairing Pavement Joints - Detail 7 or 8	200 m/day
Seal Coat	6400 lane m/day
Diamond Grinding/Profile Texturing Concrete	3300 m <sup>2</sup> /day
Rest Area Building	
Order Material	3 months
Construct Building	9 months
Tower Lights	
Order and Deliver Towers	100 days
Weigh-In-Motion	
Order and Deliver Materials	1 month-6weeks
O & D with Installation	3 months
Raised Pavement Markers	300 each/day
Attenuators	2 each/day
Shoulder Corrugations, Ground or Cut	8 km-9.7 km/side/day
Aggregate Base	2900 m <sup>2</sup> /day
Aggregate Shoulders	350 m <sup>3</sup> /day
Freeway Signing - 3# Post Type	50 signs/day
<b>Concrete Joint Repair</b> (High Production-Projects with > 1000 patches)	
Average (1.8m)	50 patches/day
Large (>1.8m)	500 m <sup>2</sup> /day

<b>Bridge Painting</b>	90 m2/day
<b>Pin and Hanger Replacement</b>	3 beams/day
Order Pin & Hanger	60 days
<b>Bridge Repair</b>	
Scarifying (Including Clean up)	10000 m2/day
Joint Removal (Including Clean up)	4 m/day
Forming & Placement	3.5 m/day
Hydro-Demolishing	300 m/day
Barrier Removal	15 m/day
Placement	45 m/day
Hand Chipping (Other than Deck)	.24 m <sup>3</sup> /person/day
Shoulder Corrugations, Ground or Cut	8 km-9.7 km/side/day
Casting Latex Overlay	250 m/day
Curing Overlay	
Regular	4 days
High Early	1 day
Thrie Beam Retrofit	30 m/day
Beam End Repairs	
Welded Repairs	.75 days/repair
Bolted Repairs	.50 days/repair
Bolted Stiffeners (Pair)	.25 days/repair
Grind Beam Ends	.25 days/repair
Welded Stiffeners (Pair)	.25 days/repairH-
Pedestal Repairs:	
Welded Repair	.50 days/each
Replacement	1 day/each
Deck Removal	235 m <sup>2</sup> /day
<b>Surfacing-Bituminous</b>	
Metro-Primary (<18000mtons)	
Paving	540 mtons/day
Joints	150 m/day
Cold Milling	3400 m2/day
Aggregate Shoulders	900 mtons/day
Metro Primary (>18000mtons)	
Paving	540 mtons/day
Joints	200 m/day
Cold Milling	7500 m2/day
Metro Interstate (>18000mtons)	
Paving	1100 mtons/day
Joints	360 m/day

Aggregate Shoulders	900 mtons/day
Urban Primary (<18000mtons)	
Paving	640 mtons/day
Joints	100 m/day
Cold Milling	1700 m2/day
Rubbilizing	1700 m2/day
Aggregate Shoulders	450 mtons/day
Urban Primary (>18000mtons)	
Paving	1000 mtons/day
Joints	120 m/day
Cold Milling	1700 m2/day
Aggregate Shoulders	500 mtons/day
Urban Interstate (>18000mtons)	
Paving	1200 mtons/day
Joints	220 m/day
Cold Milling	1700 m2/day
Rubbilizing	5800 m2/day
Aggregate Shoulders	640 mtons/day
Rural Primary (<18000mtons)	
Paving	640 mtons/day
Joints	120 m/day
Cold Milling	590 mtons/day
Crush & Shape	10000 m2/day
Aggregate Shoulders	640 mtons/day
Rural Primary (>18000mtons)	
Paving	1100 mtons/day
Joints	150 m/day
Cold Milling	800 mtons/day
Crush & Shape	10000 m2/day
Rural Interstate (>18000mtons)	
Paving	1280 mtons/day
Joints	220 m/day

## B. WORKSHEET

### WORK DAY/COMPLETION DATE DETERMINATION

CS: \_\_\_\_\_

JN:

DESCRIPTION OF WORK: \_\_\_\_\_

### MAJOR WORK ITEM

## PRODUCTION QUANTITY                  RATE

ESTIMATED  
TIME

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

TOTAL ESTIMATED TIME:

COMPLETION DATE: \_\_\_\_\_ (Calendar Days or Work Days)

COMMENTS:

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### C. MDOT CALENDARS

The following are the MDOT 4, 5 and 6 day calendars:

CALENDAR	DESCRIPTION	START	FINISH
1	Std - Apr 16 - Nov 15 - 4 day	APR 16	NOV 15
2	LP - Bit Stab - 4 day	MAY 15	OCT 15
3	UP - Bit Stab - 4 day	JUN 01	OCT 01
4	LP S of M-46 - Bit Pave - 4 day	MAY 05	NOV 15
5	LP N of M-46 - Bit Pave - 4 day	MAY 15	NOV 01
6	UP - Bit Pave - 4 day	JUN 01	OCT 15
7	LP - Bit Seal Coat - 4 day	JUN 01	SEP 15
8	UP - Bit Seal Coat - 4 day	JUN 15	SEP 01
9	Tree Planting - Deciduous - 4 day	MAR 01 OCT 01	MAY 15 NOV 15
10	Tree Planting - Evergreen - 4 day	MAR 01	JUN 01
11	South LP - Restoration - 4 day	MAY 01	OCT 10
12	North LP - Restoration - 4 day	MAY 01	OCT 01
13	UP - Restoration - 4 day	MAY 01	SEP 20
14	Full Year - Winter Work - 4 day	JAN 01	DEC 31
21	Std - Apr 16 - Nov 15 - 5 day	APR 16	NOV 15
22	LP - Bit Stab - 5 day	MAY 15	OCT 15
23	UP - Bit Stab - 5 day	JUN 01	OCT 01
24	LP S of M-46 - Bit Pave - 5 day	MAY 05	NOV 15
25	LP N of M-46 - Bit Pave - 5 day	MAY 15	NOV 01
26	UP - Bit Pave - 5 day	JUN 01	OCT 15
27	LP - Bit Seal Coat - 5 day	JUN 01	SEP 15
28	UP - Bit Seal Coat - 5 day	JUN 15	SEP 01
29	Tree Planting - Deciduous - 5 day	MAR 01 OCT 01	MAY 01 NOV 15

30	Tree Planting - Evergreen - 5 day	MAR 01	JUN 01
31	South LP - Restoration - 5 day	MAY 01	OCT 10
32	North LP - Restoration - 5 day	MAY 01	OCT 01
33	UP - Restoration - 5 day	MAY 01	SEP 20
34	Full Year - Winter Work - 5 day	JAN 01	DEC 31
35	Full Year - Expedited - 6 day	JAN 01	DEC 31

**ATTACHMENT G**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**MONTHLY PROGRESS REPORTS**

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

**Control Section 00000**  
**Job Number 00000C**  
**Structure Number S00**  
**Date 00/00/00**

**MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
- B. Anticipated work items for the upcoming month.
- C. Real or anticipated problems on the project.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
- E. Items needed from MDOT.
- F. Copy of Verbal Contact Records for the period (attached).

**Structure Number - Control Section - Job Number**  
**Route, Location Description**  
Design Schedule as of 00/00/95

**LIST TASKS, SUBMITTALS, APPROVALS AND MEETINGS AS OUTLINED IN SCOPE OF DESIGN SERVICES AS NEEDED. THIS LIST IS JUST AN EXAMPLE.**

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) or <b>Actual</b> Finish Dates	Task	Task Description
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	??	Initial project meeting.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3330	Conduct Design Survey..
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3360	Prepare Base Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Submit Base Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3580	Develop Preliminary Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3390	Develop Construction Zone Traffic Control Concepts
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3540	Develop Construction Zone Traffic Control Plan
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>	3550	Develop Preliminary Traffic Operations Plan.
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>	3351	Review & Submit of Preliminary Right-Of-Way Plans.
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>		Submittal of The Plan Review Package.
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>		Completion of the Plan Review Meeting.
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>	3840	Develop Final Plans and Specifications
00/00/00	(00/00/00)	00/00/00	<b>00/00/00</b>		Submittal of final plans/proposal package to MDOT for final review.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3870	Omissions/Errors Check (OEC) Meeting
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Vendor's Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Final Deliverables to MDOT

**MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
  - 1. During the last month we completed the Final Right of Way plans and submitted them to Thomas Nelson, Jr. on 05/01/99.
- B. Anticipated work items for the upcoming month.
  - 1. Submit the Preliminary Plans and related material on 03/11/99.
  - 2. Attend the meeting regarding the Ameritech lines on the bridge, scheduled for 03/12/99.
- C. Real or anticipated problems on the project.
  - 1. We foresee no problems at this time.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
  - 1. The design is falling behind schedule because we had problems resolving the geometries of the ramps in relation to the bridge. The Preliminary Plan submittal will be the only task affected by this delay because we will make up the lost time prior to submitting the Final Plans and Specifications.
- E. Items needed from MDOT.
  - 1. Prior to final Plan submittal we will need the latest Special provision and Supplemental Specification checklist.
- F. Copy of Verbal Contact Records for the period (attached).
  - 1. Discussed bridge and ramp geometries with Tom Myers of M\$DOT Traffic and Safety Division on 07-24-95.

**SN: S02 - CS: 12345 - JN: 11111C**  
**M-111, from There Village Limits to north of That Road**  
Design Schedule as of 07/31/95

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) or <b>Actual</b> Finish Dates	Task	Task Description
01/12/95	01/12/95	<b>01/12/95</b>	<b>01/12/95</b> ??		Initial project meeting.
01/29/95	01/29/95	<b>01/30/95</b>	<b>01/30/95</b> 3330		Conduct Design Survey.
02/17/95	04/10/95	<b>02/17/95</b>	<b>04/20/95</b> 3360		Prepare Base Plans.
02/29/95	02/29/95	<b>02/29/95</b>	<b>02/29/95</b> 3390		Develop the Construction Zone Traffic Control Concepts
03/12/95	03/13/95	<b>03/12/95</b>	(03/30/95)	3540	Develop Construction Zone Traffic Control Plan
03/20/95	03/19/95	<b>03/25/95</b>	(03/30/95)	3551	Develop/Review Preliminary Traffic Signal Plan
07/01/95	07/01/95	(07/01/95)	(07/01/95)	3590	The Plan Review Meeting
07/11/95	08/11/95	(07/11/95)	(08/11/95)	3821	Complete/Review Traffic Signal Plan
09/15/95	09/15/95	(09/15/95)	(09/15/95)	3830	Complete Construction Zone Traffic Control Plan.
09/16/95	09/16/95	(09/16/95)	(09/16/95)	3840	Develop Final Plans and Specifications
09/25/95	09/23/95	(09/25/95)	(09/25/95)	3870	Omissions/Errors Check (OEC) Meeting

## VERBAL CONTACT RECORD

**Control Section** 12345

**Job Number** 11111C

**Structure Number** S02

**Date** 07/31/95

Joe Engineer talked to Tom Myers and decided to use a 0.05'/ft super on ramp A leading into the bridge.

**ATTACHMENT G**  
**IM CS 82191- JN 79672C, JN 80377C, JN 79011C, D , JN 79012C, D JN 79013C, D**  
**I-75 (Chrysler Freeway) from Gibraltar Road to Toledo Dix**  
**Cities of Rockwood, Flat Rock, Woodhaven, and Brownstown Township, Wayne County**

**P/PMS Task Combined Manual**

The MDOT P/PMS Task Combined Manual is now listed on the MDOT Bulletin Board System and can be found under the PPMS library. An index of the latest version of the task descriptions along with any revisions will be included as part of this authorization.

VendorS are still encouraged to review and provide comment on the draft pages from the MDOT P/PMS Task Combined Manual. Please send suggestions to:

Patricia A. Schafer  
Administrative Products Supervising Engineer  
Design Division  
Michigan Department of Transportation  
425 West Ottawa  
P.O. Box 30050  
Lansing, MI 48909

**P/PMS TASK - INDEX - VERSION 2** rev 2  
ISSUED 9/29/2000

<b>P/PMS TASK</b>	<b>CURRENT DATE</b>	<b>LATEST REVISION DATE</b>
3120 - CONDUCT STRUCTURE DECK CONDITION SURVEY	07/29/99	
3330 - CONDUCT DESIGN SURVEY	07/29/99	
3340 - CONDUCT STRUCTURE SURVEY	07/29/99	
3350 - CONDUCT HYDRAULICS SURVEY	07/29/99	
3360 - PREPARE BASE PLANS	06/22/99	
3361 - REVIEW AND SUBMIT PRELIMINARY RIGHT OF WAY (PROW) PLANS	07/16/99	
3370 - PREPARE STRUCTURE STUDY	06/16/99	
3380 - REVIEW BASE PLANS	06/29/99	
3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS	07/16/99	
3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION	07/29/99	
3520 - CONDUCT HYDROLOGIC, HYDRAULIC AND SCOUR ANALYSES	08/29/00	revised per P. Schriener
3530 - CONDUCT FOUNDATION STRUCTURE INVESTIGATION	07/16/99	
3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN	07/16/99	
3551 - DEVELOP/REVIEW PRELIMINARY TRAFFIC SIGNALS PLAN	07/16/99	added to index 1/5/2000
3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN	07/16/99	
3553 - DEVELOP PRELIMINARY NON - FREEWAY SIGNING PLAN	07/16/99	
3554 - DEVELOP PRELIMINARY FREEWAY SIGNING PLAN	07/16/99	
3570 - PREPARE PRELIMINARY STRUCTURE PLANS	07/16/99	
3580 - DEVELOP PRELIMINARY PLANS	06/30/99	
3581 - FINAL RIGHT-OF-WAY PLANS	07/16/99	

<b>P/PMS TASK</b>	<b>CURRENT DATE</b>	<b>LATEST REVISION DATE</b>
<b>3590 - REVIEW PRELIMINARY PLANS</b>	<b>06/29/99</b>	
<b>3670 - DEVELOP MUNICIPAL UTILITY PLANS</b>	<b>06/30/99</b>	
<b>3675 - DEVELOP ELECTRICAL PLANS</b>	<b>07/01/99</b>	
<b>3710 - DEVELOP REQUIRED MITIGATION (FOR INFORMATION ONLY, THIS IS NOT A VENDOR TASK)</b>	<b>07/16/99</b>	
<b>3720 - SUBMIT ENVIRONMENTAL PERMIT APPLICATIONS (FOR INFORMATION ONLY, THIS IS NOT A VENDOR TASK)</b>	<b>07/16/99</b>	
<b>3821 - COMPLETE/REVIEW TRAFFIC SIGNAL PLANS</b>	<b>07/16/99</b>	
<b>3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN</b>	<b>07/16/99</b>	
<b>3823 - COMPLETE NON-FREEWAY SIGNING PLAN</b>	<b>07/16/99</b>	
<b>3824 - COMPLETE FREEWAY SIGNING PLAN</b>	<b>07/16/99</b>	
<b>3830 - COMPLETE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN</b>	<b>06/22/99</b>	
<b>3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS</b>	<b>07/02/99</b>	
<b>3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS</b>	<b>07/29/99</b>	
<b>3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING</b>	<b>07/13/99</b>	
<b>4120 - OBTAIN PRELIMINARY TITLE COMMITMENTS</b>	<b>06/29/99</b>	
<b>4130 - PREPARE MARKED FINAL R.O.W. PLANS</b>	<b>06/29/99</b>	
<b>4140 - PREPARE PROPERTY LEGAL INSTRUMENTS</b>	<b>06/29/99</b>	
<b>5010 - CONSTRUCTION PHASE ENGINEERING ASSISTANCE</b>	<b>07/29/99</b>	